

## EXTENDED MULTI-SPOT COMPUTED TOMOGRAPHY X-RAY SOURCE

### ABSTRACT

**[0036]** Systems and methods for obtaining multi-slice images having a total thickness of up to about 160mm or more in a single gantry rotation in computed tomography or volume computed tomography are described. One embodiment comprises an extended, multi-spot x-ray source for computed tomography or volume computed tomography imaging, comprising: an electron gun capable of producing a plurality of electron beams, each electron beam focused at a predetermined distance and aimed in a predetermined direction; and a plurality of targets positioned to receive the electron beams and generate x-rays in response thereto, each target comprising a predetermined focal spot thereon, wherein each electron beam is synchronized to strike, at an appropriate time, a predetermined target comprising a predetermined focal spot thereon.